

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

In this response, claims 1, 2, 7, 8, 11, and 12 have been amended. No claims have been canceled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicant submits that the amendments do not add new matter.

Applicants reserve all rights with respect to the applicability of the Doctrine of Equivalents.

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the admitted known prior art (“APA”) in view of any one of U.S. Patent No. 5,800,636 to Tsukada et al. (“Tsukada”), U.S. Patent Publication No. 2003/0047706 to Mitani et al. (“Mitani”) or U.S. Patent Publication No. 2002/0014280 to Moro (“Moro”).

The Examiner refers to p. 4 lines 5-9 of the specification as admitted known prior art.

Applicants respectfully disagree. In contrast, the portion on p. 4 lines 5-9 of the specification is part of a disclosure of the invention (p. 3, line 16). More specifically, the portion on p. 4 lines 5-9 of the specification is part of a technical solution (p. 3, line 31). In particular, the cited portion discloses the following:

Furthermore, the present invention provides the unit block which is characterized in that the sendust powder contains 9-10 % Si, 4-8 % Al, and the balance of Fe, the High Flux powder contains 45-55 % Ni and the balance of Fe, the MPP powder contains 80-81 % Ni, 16-18 % Fe, and 1.5-2. 5 % Mo, and the silicon steel powder contains 5-8 wt% Si and the balance of Fe.

(specification, p. 4, lines 5-9) (emphasis added)

Therefore, applicants request the Examiner to withdraw the reference to p. 4 lines 5-9 of the specification as admitted known prior art.

Applicant has amended claim 1 to read as follows:

A unit block for a core employing soft magnetic metal powder, comprising:

one or more powders which each have an average particle size of 175 μm or less and which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process,

wherein the powders are compacted by insulation coating, at a pressure of 10 tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm.

(Amended claim 1)(emphasis added)

As set forth above, amended claim 1 requires “one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm.”(emphasis added). In order to form a block employing soft magnetic powder, a powder pretreatment process is essential. The powders are prepared by a gas spraying process, compacted by an insulation coating, at pressure of 10-18 tons/cm² and heat treated at 600⁰C-800⁰C (e.g., specification, p. 4, lines 17-29) to improve formability and insulation of metal powder to assure excellent compacting strength of the unit block.

The portions in the specification at page 2, lines 5-32 referred to by Examiner as APA disclose a core made of iron powder, laminated silicon steel core or amorphous core, MPP core, and sendust core. In contrast, amended claim 1 refers to one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C. APA fails to disclose one or more powders which are selected from the group consisting of sendust powder, High Flux

powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10 tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, as recited in amended claim 1.

Tsukada discloses a dust core, iron powder therefor and method of making. Tsukada fails to disclose forming a unit block, as recited in amended claim 1. More specifically, Tsukada discloses a dust core consisting essentially of iron powder particles. Tsukada fails to disclose one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, as recited in amended claim 1.

Mitani, in contrast, discloses high strength dust core. Mitani fails to disclose forming a unit block, as recited in amended claim 1. More specifically, Mitani discloses a ferromagnetic metal powder (paragraph [0022]). Mitani fails to disclose one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, as recited in amended claim 1.

Moro, in contrast, discloses the ferromagnetic powder selected from supermalloy, permalloy, sendust, and the like. (paragraph [0029]). Moro fails to disclose one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP

powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, as recited in amended claim 1.

It is respectfully submitted that none of the references cited by the Examiner teaches or suggests a combination with each other. It would be impermissible hindsight, based on applicants' own disclosure, to combine these references.

Furthermore, even if Moro, Mitani, Tsukada, and APA were combined, such a combination would still lack one or more powders which are selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C to form the unit block having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, as recited in amended claim 1.

Therefore, applicant respectfully submits that claim 1, as amended, is not obvious under 35 U.S.C. § 103(a) over the known prior art, Tsukada, Mitani, or Moro.

Given that claim 2 depends from amended claim 1, and adds additional limitations, applicants respectfully submit that claim 2 is not obvious under 35 U.S.C. § 103(a) over the known prior art, Tsukada, Mitani, or Moro.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Admitted Prior Art, in view of any one of Tsukada, Mitani, or Moro, as applied to claims 1 and 2 above, and further in view of JP Patent No. 4-165607 to Daihen Corp. ("Daihen")

Amended claim 3 reads as follows:

A core, which employs unit blocks made of soft magnetic metal powders and which has excellent high-current DC bias characteristics, comprising:

the unit blocks for the core, which are produced using one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, and which each have a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, wherein the powders are compacted by insulation coating, at a pressure of 10 tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C,

wherein the unit blocks are attached to each other using a heat and fire resistant epoxy or polyurethane adhesive to form a single-phase reactor or a three- phase reactor.

(Amended claim 3)(emphasis added)

As set forth above, the portions in the specification at page 2, lines 5-32 referred to by Examiner as APA disclose a core made of iron powder, laminated silicon steel core or amorphous core, MPP core, and sendust core. In contrast, amended claim 3 refers to one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, and which each have a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C.

As set forth above, Tsukada, in contrast, discloses a dust core consisting essentially of iron powder particles. Tsukada fails to disclose one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C, as recited in amended claim 3.

As set forth above, Mitani discloses a ferromagnetic metal powder (paragraph [0022]). Mitani fails to disclose one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process,

wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C, as recited in amended claim 3.

Moro, in contrast, discloses the ferromagnetic powder selected from supermalloy, permalloy, sendust, and the like. (paragraph [0029]). More fails to disclose one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C, as recited in amended claim 3.

Daihen, in contrast, discloses a core for static induction electronic device. In fact, Daihen discloses forming a block by shaping a ferrite. Forming a block by using ferrite in Daihen does not include insulation coating of the powders. The ferrite block of Daihen is treated at temperatures higher than 1000⁰C for sintering to maintain shaping strength. In contrast, amended claim 3 refers to forming a block using one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C. Daihen fails to disclose one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C, as recited in amended claim 3.

It is respectfully submitted that none of the references cited by the Examiner teaches or suggests a combination with each other. It would be impermissible hindsight, based on applicants' own disclosure, to combine these references.

Furthermore, even if Daihen, Moro, Mitani, Tsukada, and APA were combined, such a combination would still lack one or more powders selected from the group consisting of sendust powder, High Flux powder, MPP powder, and silicon steel powder, produced by a spray process, wherein the powders are compacted by insulation coating, at a pressure of 10tons/cm²-18 tons/cm² and heat treated at 600⁰C-800⁰C, as recited in amended claim 3.

Therefore, applicants respectfully submit that claim 3, as amended, is not obvious under 35 U.S.C. § 103(a) over APA, Tsukada, Mitani, or Moro and further in view of Daihen.

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If the Examiner believes a telephone conference would expedite the prosecution of the present application, the Examiner is invited to call the undersigned at (408) 720-8300.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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Date: April 22, 2010

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